

ABSTRACT

The invention is directed to the use of medium to high power (greater than or equal to 1 kW) and medium to high energy (greater than or equal to 1 MeV) electron beam or X-ray to cure coatings in thick complex three dimensional automotive bodies. The medium to high power, medium to high energy has sufficient throughput and penetration to permit curing through multiple layers of steel and, therefore, is able to penetrate shadows caused by the bends, folds and curves in automotive bodies. In addition, the medium to high power, medium to high energy beam has sufficient throughput and penetration to cure the thicker coatings that accumulate in surface cracks and crevices. The invention permits the use of electron beam curable coatings and, thereby, reduces the fire hazard, hazardous air pollutant, and volatile organic problems associated with the non-reactive solvents used in the solvent based paints conventionally employed in the automotive industry.